

Attorney Docket # 4925-162

Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Risto PAATELMA et al.

Serial No.: To be assigned

Filed: Concurrently herewith

For: Synchroniser

Examiner:

Group Art:

Assistant Commissioner for Patents
Washington, DC 20231

PRELIMINARY AMENDMENT

S I R:

Prior to examination of the above-identified application please amend the application as follows:

IN THE SPECIFICATION:

Page 1, before line 1, the paragraph beginning with "The present invention", insert the following title:

--FIELD OF THE INVENTION--.

Page 1, before line 4, the paragraph beginning with "Wireless cellular", insert the following title:

--BACKGROUND OF THE INVENTION--.

Page 4, before line 9, the paragraph beginning with "It is an aim of", insert the following title:

--SUMMARY OF THE INVENTION--.

Page 4, before line 22, the paragraph beginning with "For better understanding", insert the following paragraph and title:

-- Other objects and features of the present invention will become apparent from the following detailed description considered in conjunction with the accompanying drawings. It is to be understood, however, that the drawings are intended solely for purposes of illustration and not as a definition of the limits of the invention, for which reference should be made to the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS--.

Page 5, before line 9, the paragraph beginning with "Reference will be", insert the following title:

--DETAILED DESCRIPTION OF THE PRESENTLY PREFERRED EMBODIMENTS--.

Page 14, after the last line, insert the following paragraph:

--Thus, while there have been shown and described and pointed out fundamental novel features of the present invention as applied to a preferred embodiment thereof, it will be understood that various omissions and substitutions and changes in the form and details of the devices described

and illustrated, and in their operation, and of the methods described may be made by those skilled in the art without departing from the spirit of the present invention. For example, it is expressly intended that all combinations of those elements and/or method steps which perform substantially the same function in substantially the same way to achieve the same results are within the scope of the invention. Substitutions of elements from one described embodiment to another are also fully intended and contemplated. It is also to be understood that the drawings are not necessarily drawn to scale but that they are merely conceptual in nature. It is the intention, therefore, to be limited only as indicated by the scope of the claims appended hereto.--.

Page 15, line 1, delete "CLAIMS" and insert therefor --What is claimed is:--.

IN THE CLAIMS:

Please amend 3, 5, 6, 8, 10 to 15 to read as follows:

3. A synchroniser as claimed in claim 1, wherein said providing means, said controlling means and said estimating means are in the digital domain.

5. A synchroniser as claimed in claim 1, wherein said providing means comprises a digital corrector.

6. A synchroniser as claimed in claim 1, wherein a rough correction is provided by said control signal.

8. A synchroniser as claimed in claim 6, wherein a finer correction is provided.

10. A synchroniser as claimed in claim 1, wherein said estimator is arranged to determine that the difference between two successive levels has increased if a difference between the upper of said levels and an estimated level for an actual signal provides a signal at a higher level than a signal provided by a difference between a lower of said levels and an estimated level for the actual signal.

11. A synchroniser as claimed in claim 2, wherein said estimator is arranged to determine that the difference between two successive levels has increased if a difference between the upper of said levels and an estimated level for an actual signal provides a signal at a higher level than a signal provided by a difference between a lower of said levels and an estimated level for the actual signal.

12. A synchroniser as claimed in claim 1, wherein said estimator is arranged to determine that an actual signal has changed if a differences between the upper of said levels and an actual signal provides a signal at substantially the same level as a signal provided by a difference between a lower of said levels and the actual signal, said same level being different to a previous level for said actual signal.

13. A synchroniser as claimed in claim 1, wherein said synchroniser is arranged to at least one of acquire and track frequency error.

14. A synchroniser as claimed in claim 1, wherein said synchroniser is arranged to at least one of acquire and track timing error.

15. A receiver comprising a synchroniser as claimed in claim 1.

Add the following new claims:

17. A synchroniser as claimed in claim 2, wherein said providing means, said controlling means and said estimating means are in the digital domain.

18. A synchroniser as claimed in claim 7, wherein a finer correction is provided.

REMARKS

This preliminary amendment is presented to place the application in proper form for examination and to eliminate multiple dependency from the present claims. No new matter has been added. Early examination and favorable consideration of the above-identified application is earnestly solicited.

Attached hereto is a mark-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made**".

Any additional fees or charges required at this time in connection with the application may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

3. A synchroniser as claimed in claim 1 [or 2], wherein said providing means, said controlling means and said estimating means are in the digital domain.

5. A synchroniser as claimed in [any preceding] claim 1, wherein said providing means comprises a digital corrector.

6. A synchroniser as claimed in [any preceding] claim 1, wherein a rough correction is provided by said control signal.

8. A synchroniser as claimed in claim 6 [or 7], wherein a finer correction is provided.

10. A synchroniser as claimed in [any preceding] claim 1, wherein said estimator is arranged to determine that the difference between two successive levels has increased if a difference between the upper of said levels and [a] an estimated level for an actual signal provides a signal at a higher level than a signal provided by a difference between a lower of said levels and an estimated level for the actual signal.

11. A synchroniser as claimed in [any preceding] claim 2, wherein said estimator is arranged to determine that the difference between two successive levels has increased if a

difference between the upper of said levels and [a] an estimated level for an actual signal provides a signal at a higher level than a signal provided by a difference between a lower of said levels and an estimated level for the actual signal.

12. A synchroniser as claimed in [any preceding] claim 1, wherein said estimator is arranged to determine that an actual signal has changed if a differences between the upper of said levels and an actual signal provides a signal at substantially the same level as a signal provided by a difference between a lower of said levels and the actual signal, said same level being different to a previous level for said actual signal.

13. A synchroniser as claimed in [any preceding] claim 1, wherein said synchroniser is arranged to at least one of acquire [and/or] and track frequency error.

14. A synchroniser as claimed in [any preceding] claim 1, wherein said synchroniser is arranged to at least one of acquire [and/or] and track timing error.

15. A receiver comprising a synchroniser as claimed in [any preceding] claim 1.